PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS

CRB

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CRB

TO:	Wat	er Rights Sect	ion		Date	September 26, 2008					
FROM	· Grou	und Water/Hy	drology Section	Mike Zw	vart						
TROM	. 010	und water/rry	diology Section	Reviewer	r's Name						
SUBJE	CT: App	lication G-	17068	Super	sedes review of						
						Date of Review(s)					
PUBL	IC INTERES	T PRESUM	<u>PTION; GROUND</u>	WATER							
OAR 6	90-310-130 (1)	The Departme	nt shall presume that	a proposed g	groundwater use will ensi	ure the preservation of the public					
welfare,	, safety and hed	ilth as describe	d in ORS 537.525. De	epartment sta	aff review ground water a	pplications under OAR 690-310-140					
to determine whether the presumption is established. OAR 690-310-140 allows the proposed use be modified or conditioned to meet											
the pres	the presumption criteria. This review is based upon available information and agency policies in place at the time of evaluation.										
A CENEDAL INFORMATION. Applicantly News. Dunn Donohog/Dondy Dunn. Country Unsetille											
A. GEN	ERAL INFOR	MATION: Ap	plicant's Name: <u>1</u>	Kupp Kane	nes/kanuy kupp_Co	ounty: <u>Umatina</u>					
A 1	Applicant(a)	aab(a) 125	of from 10	vall(a) in the	Columbia Div	on Desin					
AI.	Applicant(s)	seek(s) <u>135</u>		wen(s) in the	Columbia Kiv	basili,					
	Junip	er Canyon, Co	<u>ld Springs Reservoir</u>	: subbasi	n Quad Map: <u>Junip</u>	er, Juniper Canyon					
A2.	Proposed use:	Irriga	tion, 10767 acres	Seasona	ality: March 1 – Oct	tober 31					
A3.	Well and aqu	ifer data (attac l	h and number logs fo	or existing w	vells; mark proposed we	ells as such under logid):					
		Applicant's		Proposed	Location	Location metes and bounds e.g					
Well	Logid	Well #	Proposed Aquifer*	Rate(cfs)	(T/R-S OO-O)	2250' N, 1200' E fr NW cor S 36					
1	Proposed	1	CRB	135	5N/30E-15	2455' S, 2660' E fr NW cor S 15					
2	"	2	CRB	135	5N/30E-14	2455' S, 2645' E fr NW cor S 14					
3	"	3	CRB	135	5N/30E-13	2230' S, 2440' E fr NW cor S 13					
4	"	4	CRB	135	5N/31E-18	2335' S, 2635' E fr NW cor S 18					
5	"	5	CRB	135	5N/31E-17	2200' S, 2285' E fr NW cor S 17					
6	"	6	CRB	135	5N/31E-7	2530' S, 2610' E fr NW cor S 7					
7	"	7	CRB	135	5N/31E-8	2085' N, 2320' E fr SW cor S 8					
8	"	8	CRB	135	5N/30E-12	2520' S, 2460' E fr NW cor S 12					
9	"	9	CRB	135	5N/30E-11	2600' S, 2720' E fr NW cor S 11					
10	"	10	CRB	135	5N/30E-1	695' N, 2160' E fr SW cor S 1					
11	"	11	CRB	135	5N/31E-4	165' N, 1195' W fr SE cor S 4					
12	"	12	CRB	135	5N/31E-10	445' S, 960' E fr NW cor S 10					
13	"	13	CRB	135	5N/31E-3	175' N, 1150' W fr SE cor S 3					
14	"	14	CRB	135	6N/31E-23	565' S, 2070' E fr NW cor S 23					
15	"	15	CRB	135	6N/31E-27	110' S, 120' W fr NE cor S 27					

135

135

135

135

6N/31E-15

6N/31E-16

6N/31E-29

6N/31E-28

19"* Alluvium, CRB, Bedrock

16

17

18

"

"

"

16

17

18

19

Comments:

2355' N, 1800' E fr SW cor S 15

2090' N, 2565' W fr SE cor S 16

145' S, 310' W fr NE cor S 29

125' S, 1085' W fr NE cor S 28

	Well	First	CWI	CWI	Well	Seal	Casing	Liner	Perforations	Well	Draw	T t
Well	Elev	Water	SWL	SWL	Depth	Interval	Intervals	Intervals	Or Screens	Yield	Down	Test
	ft msl	ft bls	It bis	Date	(ft)	(ft)	(ft)	(ft)	(ft)	(gpm)	(ft)	Type
1	980				2000	0-400						
2	1020				2000	0-400						
3	1060				2000	0-400						
4	1195				2000	0-400						
5	1240				2000	0-400						
6	1110				2000	0-400						
7	1240				2000	0-400						
8	1080				2000	0-400						
9	1150				2000	0-400						
10	1185				2000	0-400						
11	1420				2000	0-400						
12	1445				2000	0-400						
13	1410				2000	0-400						
14	1660				2000	0-400						
15	1530				2000	0-400						
16	1620				2000	0-400						
17	1470				2000	0-400						
18	1520				2000	0-400						
19	1520				2000	0-400						

Use data from application for proposed wells.

Comments: <u>All information from the application</u>. The proposed well construction would allow up to 1600 feet of A4. open borehole in each well. This large of an open interval would allow commingling of multiple basalt aquifers within the well bores. There is no current information as to the local heads and water quality of ground water likely to be developed by the proposed deep wells, but it not likely that all aquifers developed will have reasonably similar heads. Therefore, up-hole or down-hole flow will likely result if the proposed wells are constructed in this manner.

A5. \square **Provisions of the <u>Umatilla</u>** Basin rules relative to the development, classification and/or management of ground water hydraulically connected to surface water \square **are**, *or* \square **are not**, activated by this application. (Not all basin rules contain such provisions.) Comments:

A6. Well(s) #_____, ____, ____, ____, tap(s) an aquifer limited by an administrative restriction. Name of administrative area:

Comments:

B. GROUND WATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070

- B1. **Based upon available data**, I have determined that <u>ground water</u>* for the proposed use:
 - a. **is** over appropriated, **is not** over appropriated, *or* **is cannot be determined to be** over appropriated during any period of the proposed use. * This finding is limited to the ground water portion of the over-appropriation determination as prescribed in OAR 690-310-130;
 - b. **Will not** *or* **will** likely be available in the amounts requested without injury to prior water rights. * This finding is limited to the ground water portion of the injury determination as prescribed in OAR 690-310-130;
 - c. \square will not or \square will likely to be available within the capacity of the ground water resource; or
 - d. X will, if properly conditioned, avoid injury to existing ground water rights or to the ground water resource:
 i. X The permit should contain condition #(s) 7N
 - ii. \square The permit should be conditioned as indicated in item 2 below.
 - iii. \square The permit should contain special condition(s) as indicated in item 3 below;
- B2. a. Condition to allow ground water production from no deeper than ______ ft. below land surface;
 - b. Condition to allow ground water production from no shallower than ______ ft. below land surface;
 - c. Condition to allow ground water production only from the <u>basalt</u> ground water reservoir;
 - d. **Well reconstruction** is necessary to accomplish one or more of the above conditions. The problems that are likely to occur with this use and without reconstructing are cited below. Without reconstruction, I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Ground Water Section.

Describe injury –as related to water availability– that is likely to occur without well reconstruction (interference w/ senior water rights, not within the capacity of the resource, etc):

B3. Ground water availability remarks: <u>Ground water in basalt aquifers in the Umatilla Basin is subject to water-level</u> declines in areas where development of the resource is concentrated. Although such concentrated development does not yet exist in this part of the basin, there are several wells located nearby. A few of them are completed to depths below the proposed casing and seal depth of the wells here. These wells will likely be subject to injury resulting from excessively declining water-levels and substantial or undue interference resulting from the proposed use. I recommend that the applicant provide a report including additional information or demonstration that bears on the above findings that ground water will not likely be available. If a report is forthcoming that is persuasive regarding a conclusion that ground water is available for the proposal or recommends modifications to the application that would result in the same conclusion, then the permit, if issued, should include the conditions recommended at B1d above.

SPECIAL CONDITION: The wells shall be cased and sealed in such a manner to develop a single basalt aquifer.

C. GROUND WATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040

C1. 690-09-040 (1): Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
All	Basalt of the Columbia River Basalt Group	\square	

Basis for aquifer confinement evaluation: <u>Deep basalt aquifers are typically confined.</u>

C2. **690-09-040** (2) (3): Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than ¹/₄ mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

Well	SW #	Surface Water Name	GW Elev ft msl	SW Elev ft msl	Distance (ft)	Hydraulically Connected? YES NO ASSUMED	Potential for Subst. Interfer. Assumed? YES NO
5	1	McCall Canyon	800±	1050	5000		
2	2a	Cold Springs Canyon	700±	790	10500		\square
2	2b	Cold Springs Canyon	700±	680	20000		
10	3	Juniper Canyon	700±	420	6000		\square
17	4	Columbia River	600±	340	6300		
		(only closest wells listed)					

Basis for aquifer hydraulic connection evaluation: ______The relatively deep casing and seal depth will limit potential hydraulic connection to more distant reaches of deeply incised canyons in the area. The potentiometric surface in the deep basalt aquifers is poorly delineated in the area, but the gradient is very likely to the west to northwest, toward the Columbia River. Heads are probably in the range of 900-1100 msl at the eastern well locations (wells 11-15) and drop to about 500-700 msl at the western well locations (wells 1, 2 & 9). Hydraulic connection is probable at some wells with downstream reaches of Cold Springs Canyon (esp wells 2-7) and Juniper Canyon (esp. wells 10-15, 18 & 19). All wells are likely in hydraulic connection with the Columbia River, which is the ultimate discharge area for basalt aquifers in the area.

Water Availability Basin the well(s) are located within: Columbia River (no WAB): Wells 1,8,9,10,17. 30710109 JUNIPER CAN> COLUMBIA R- AT MOUTH: Wells 14,15,16,18,19. 30710342 COLD SPRINGS CAN> COLD SPRINGS RES- AT MOUTH: Wells 2,3,4,5,6,7,11,12,13 (see attached maps). C3a. **690-09-040** (4): Evaluation of stream impacts for <u>each well</u> that has been determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that surface water source, and not lower SW sources to which the stream under evaluation is tributary. Compare the requested rate against the 1% of 80% *natural* flow for the pertinent Water Availability Basin (WAB). If Q is not distributed by well, use full rate for each well. Any checked 🖾 box indicates the well is assumed to have the potential to cause PSI.

Well	SW #	Well < ¼ mile?	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?

C3b. **690-09-040 (4):** Evaluation of stream impacts by total appropriation for all wells determined or assumed to be hydraulically connected and less than 1 mile from a surface water source. Complete only if Q is distributed among wells. Otherwise same evaluation and limitations apply as in C3a above.

 	 	r J ···· ···						
SW #	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?

Comments: <u>This section does not apply.</u>

C4a. **690-09-040 (5):** Estimated impacts on **hydraulically connected surface water sources greater than one mile** as a percentage of the proposed pumping rate. Limit evaluation to the effects that will occur up to one year after pumping begins. This table encompasses the considerations required by 09-040 (5)(a), (b), (c) and (d), which are not included on this form. Use additional sheets if calculated flows from more than one WAB are required.

Non-D	istributed W	Vells											
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfei	ence CFS												
Distrib Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfe	ence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfei	ence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfei	ence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfei	rence CFS												
					•							Version	08/15/2003

(B) = 80 % Nat. (C) = 1 % Nat. Q

 $(\mathbf{D}) = (\mathbf{A}) > (\mathbf{C})$

	%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS												
Interference CFS												
	%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS												
Interference CFS												
(A) = Total Interf.												
(B) = 80 % Nat. Q												

% % % % % % % % % % % $(E) = (A / B) \times 100$

(A) = total interference as CFS; (B) = WAB calculated natural flow at 80% exceed. as CFS; (C) = 1% of calculated natural flow at 80% exceed. as CFS; (D) = highlight the checkmark for each month where (A) is greater than (C); (E) = total interference divided by 80% flow as percentage.

Basis for impact evaluation: <u>This section applies, however, the number of wells involved and potential to impact two</u> WABs and the Columbia River will greatly complicate the calculation of potential interference. Calculations were not attempted at this time.

C4b. 690-09-040 (5) (b) The potential to impair or detrimentally affect the public interest is to be determined by the Water **Rights Section.**

C5. If properly conditioned, the surface water source(s) can be adequately protected from interference, and/or ground water use under this permit can be regulated if it is found to substantially interfere with surface water:

i. \Box The permit should contain condition #(s)

ii. The permit should contain special condition(s) as indicated in "Remarks" below;

C6. SW / GW Remarks and Conditions:

%

References Used: <u>Local well logs; nearby recent reviews; GW Reports 30 & 35; Lower Umatilla Basin Report, 1995,</u> <u>Chapter 2, Hydrogeology, by Wozniak.</u>

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D. WELL CONSTRUCTION, OAR 690-200

D1.	Well #: Logid:
D2.	THE WELL does not meet current well construction standards based upon: a. review of the well log; b. field inspection by c. report of CWRE d. other: (specify)
D3.	THE WELL construction deficiency: a. constitutes a health threat under Division 200 rules; b. commingles water from more than one ground water reservoir; c. permits the loss of artesian head; d. permits the de-watering of one or more ground water reservoirs; e. other: (specify)
D4.	THE WELL construction deficiency is described as follows:
D5.	THE WELL a. was , <i>or</i> was not constructed according to the standards in effect at the time of original construction or most recent modification.
	b. I don't know if it met standards at the time of construction.
D6.	Route to the Enforcement Section. I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Enforcement Section and the Ground Water Section.
TH	SECTION TO BE COMPLETED BY ENFORCEMENT PERSONNEL
D7.	Well construction deficiency has been corrected by the following actions:
	(Enforcement Section Signature)
Þ٥	Doute to Water Dights Section (attach well reconstruction loss to this page)

D8. [] Route to Water Rights Section (attach well reconstruction logs to this page).

JUNIPER CAN> COLUMBIA R- AT MOUTH UMATILLA BASIN

Water Availability as of 9/18/2008 : 30710109 Exceedance Level:

Watershed ID #: 30710109

Date: 9/18/2008

Time: 11:39 PM

80%

-

	_		1				
Water Availability Calculation	(Consumptive Uses and <u>S</u> torages		Instream	n Requirements	Re	servations
	Water Right	5			Watershed Cha	aracteristics	

Water Availability Calculation

Monthly Streamflows in Cubic Feet per Second Storage at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirement	Net Water Available
Jan	0.59	0.00	0.59	0.00	0.00	0.59
Feb	2.53	0.00	2.53	0.00	0.00	2.53
Mar	4.94	0.01	4.93	0.00	0.00	4.93
Apr	1.21	0.07	1.14	0.00	0.00	1.14
May	0.17	0.11	0.06	0.00	0.00	0.06
Jun	0.07	0.14	-0.07	0.00	0.00	-0.07
Jul	0.04	0.20	-0.16	0.00	0.00	-0.16
Aug	0.01	0.16	-0.15	0.00	0.00	-0.15
Sep	0.00	0.10	-0.10	0.00	0.00	-0.10
Oct	0.00	0.00	0.00	0.00	0.00	0.00
Nov	0.00	0.00	0.00	0.00	0.00	0.00
Dec	0.16	0.00	0.16	0.00	0.00	0.16
Storage Acre-Feet at 50%	2,390.00	48.00	2,370.00	0.00	0.00	2,370.00

COLD SPRINGS CAN> COLD SPRINGS RES- AT MOUTH UMATILLA BASIN



Water Availability Calculation

Monthly Streamflows in Cubic Feet per Second

Storage at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirement	Net Water Available
Jan	0.55	0.02	0.54	0.00	0.00	0.54
Feb	2.49	0.05	2.44	0.00	0.00	2.44
Mar	6.25	0.14	6.11	0.00	0.00	6.11
Apr	1.69	0.17	1.52	0.00	0.00	1.52
May	0.24	0.23	0.01	0.00	0.00	0.01
Jun	0.09	0.30	-0.21	0.00	0.00	-0.21
Jul	0.05	0.41	-0.36	0.00	0.00	-0.36
Aug	0.02	0.33	-0.31	0.00	0.00	-0.31
Sep	0.00	0.20	-0.20	0.00	0.00	-0.20
Oct	0.00	0.00	0.00	0.00	0.00	0.00
Nov	0.00	0.00	0.00	0.00	0.00	0.00
Dec	0.13	0.00	0.13	0.00	0.00	0.13
Storage Acre-Feet at 50%	3,230.00	112.00	3,190.00	0.00	0.00	3,190.00